

# Adriaen's Landing

## Archeology, Geology, and Palynology in Connecticut's Central Valley

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**T**he history of human settlement in New England is closely tied to the region's major rivers, which have long channeled the flow of people and material across the landscape. From the rugged mountains of New Hampshire and Vermont to the rolling hills of Massachusetts and Connecticut, no river has exerted so great an influence as the Connecticut. Extending over 360 miles from northern New Hampshire to the edge of Long Island Sound, the Connecticut River and the Central Valley through which it flows are the primary links connecting a large portion of the New England countryside.

Despite the importance of the Connecticut River and the Central Valley to the people of the region, both past and present, many important elements of the river's history and early human settlement remain unknown. Thanks to an ambitious program of urban revitalization focused on Hartford's historic riverfront, a more detailed understanding of this story is now emerging. Spurred by the potential relocation of the New England Patriots National Football League franchise to Hartford, city and state agencies began planning a large open air stadium within the downtown area in the winter of 1998. By spring 1999, the Patriot organization had withdrawn their relocation offer.

The revitalization program, known as the Adriaen's Landing project, includes a complex of entertainment, retail, housing, and convention facilities which will re-establish the historical link between Hartford and the Connecticut River. The Capital City Economic Development Authority and the Connecticut Office of Policy and Management (OPM) have joined to administer the project, which now includes a multi-phase investigation of the site's paleoenvironmental record. As the City of Hartford and the State of Connecticut move to re-establish the historical link between the capital and the river, a diverse team of researchers is working to frame this rela-

tionship in a broader context of cultural and environmental change over the course of the last 10,000 years.

Adriaen's Landing is located immediately north of the Connecticut and Park River confluence along a section of the floodplain named for the Dutch explorer, Adriaen Block, who sailed nearly 60 miles up the Connecticut River in 1614. The area has experienced substantial modification since the arrival of Europeans, including the channelization of the Park River beneath a highway, the localized infilling of the lower floodplain, and the construction, operation, and demolition of numerous commercial and industrial facilities. Following catastrophic floods in 1936 and 1938, large levees were constructed between the river and the city. Interstate 91 now sits atop these levees immediately east of Adriaen's Landing. Although several substantial buildings are located within the project's boundaries, most of the project area is now used for parking.

The Public Archaeology Survey Team Inc. (PAST) and Raber Associates were retained to identify potential significant cultural resources within the project boundaries. Despite the heavy overprint of historic and modern development, background investigations indicated that the Adriaen's Landing area was an attractive location for paleoenvironmental research. Even with the Connecticut River's low natural gradient and consequent meandering, most sediments underlying much of the project area have not been reworked by lateral channel migration. A prominent bedrock ridge located just west of the current channel location has protected the local floodplain and enabled the accumulation of an unusually complete Holocene alluvial sequence. The regular flooding of the Connecticut River and the rapid vertical accretion of the floodplain present an opportunity to examine environmental change at a fine temporal scale. The research team hypothesized a rapid burial of the flood-

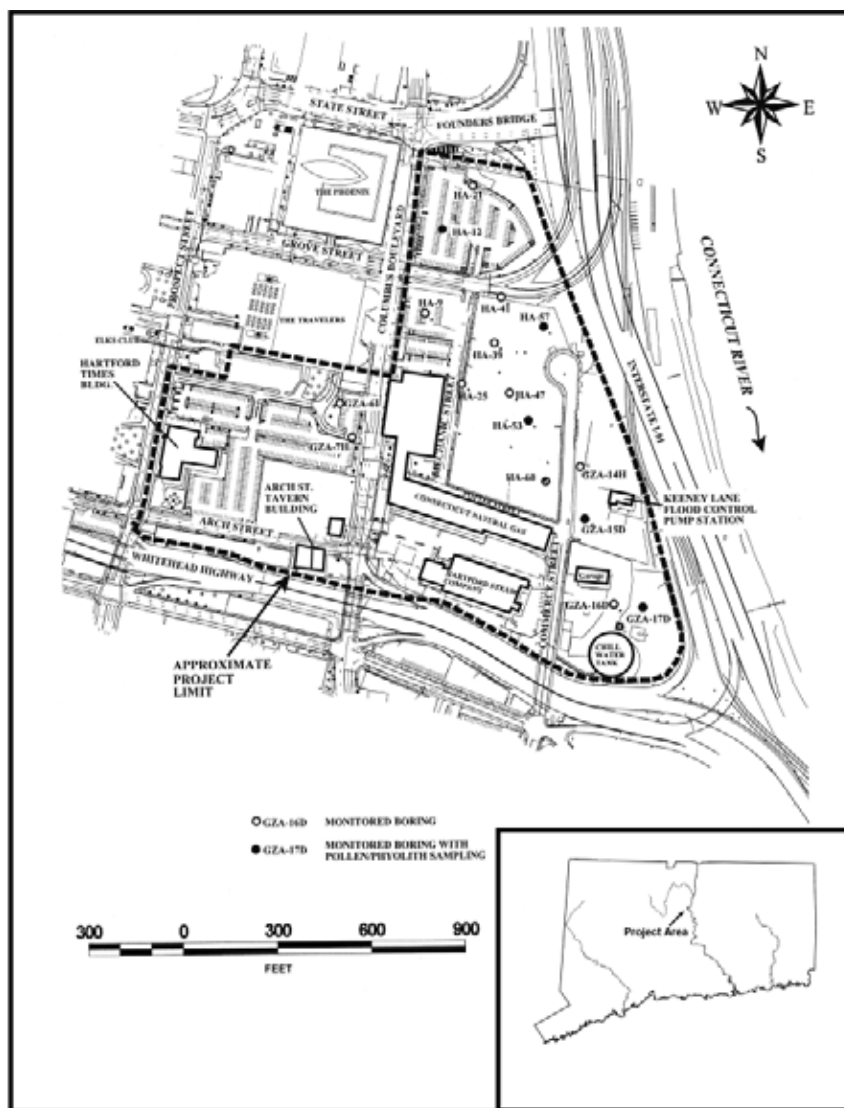
*Adriaen's Landing project area and locations of geo-technical borings.*

plain surface, particularly during the early to middle Holocene interval. This rapid burial process may have reduced bioturbation and inhibited soil formation and preserved the primary sedimentary features of the buried deposits, which might provide valuable data on the character of flood events in the distant past. Rapid burial would also enhance pollen preservation and increase the potential for the reconstruction of local plant communities through time. Finally, the project is located far enough inland to escape the disruptive effects of Holocene sea-level rise, while still retaining an indirect record of eustatic adjustments. Growth of the Connecticut River floodplain was closely linked to post-glacial sea level change and data from Adriaen's Landing could contribute to the study of Holocene coastal evolution in southern New England.

Given these favorable conditions, the Connecticut State Historic Preservation Office, OPM, and the research team agreed that the evaluation of the project's archeological sensitivity should include a paleoenvironmental investigation. Several practical concerns encouraged this approach. An extensive environmental characterization of the entire project area was already planned and PAST could "piggy-back" its preliminary sampling with that proposed by the environmental consultants, thereby reducing costs and logistical problems associated with a wholly independent investigation. Existing geo-technical data also suggested that early Holocene sediments could be buried more than 10 meters below the present surface. The tremendous costs associated with exposing these sediments through a typical archeological testing program could not be justified without a clear indication that significant archeological materials would likely be encountered. In light of the fiscal and logistical considerations, a sampling program was recommended in order to assess the archeological sensitivity of the project area.

The priority of the archeological research program at Adriaen's Landing is the reconstruction of past land-use patterns within the project area. This paleoenvironmental investigation also has potential ramifications for the interpretation of sites throughout the entire region. As the Connecticut River valley was a major focus of Native American settlement from the Mid-Holocene onwards (McBride 1984), significant geological and environmental changes within the river valley probably had wide-ranging repercussions. Reconstruction of these changes may enhance our understanding of shifting settlement patterns extending well outside of the current study area.

In April and May 1999, archeologists from PAST and Raber Associates monitored the drilling of 15 two-inch diameter borings on the buried floodplain section of the project area. Continuously-sampled cores were extracted with standard 24-inch-long "split-spoon" samplers. Macrostratigraphy was recorded for each of the cores. Pollen, phytolith, and



radiocarbon samples were collected from a subset of five borings. A total of 47 pollen samples and five radiocarbon samples was collected (Raber, et al. 2000).

Based on these preliminary field investigations, a simple five-stage model for floodplain accretion was developed. Within this sequence, pollen/phytolith analyses undertaken by Linda Scott Cummings (Paleo Research Laboratories) suggested at least two stable surfaces on which mature soils developed near the beginning and end of the floodplain sequence.

### Research Implications

This model has important implications for archeologists studying aboriginal settlement and subsistence patterns in the Holocene. The evolution of post-glacial environments was probably a dominant influence on the shifting settlement patterns observed in the region's archeological record (e.g., McBride 1984). Nicholas (1988) has argued that the early post-glacial period was marked by rich ecological mosaics in former glacial lake basins. Such areas may have been critical nodes in the settlement patterns of early Holocene foragers as they offered high resource diversity and predictability during a time of heightened climatic instability. The gradual loss of ecological diversity within these basins, coupled with the development of rich floodplain and eventually coastal environments, might have encouraged the diversification of subsistence patterns and the use of a wider variety of environments. While portions of Nicholas' model are now receiving empirical support (Forrest 1999, Jones 1999), a comprehensive evaluation requires an understanding of how and when key landscape features were formed. The evolution of wetlands has been the focus of traditional paleoenvironmental research and as a consequence, changes in these environments are well documented. The Adriaen's Landing project is now providing detailed data on contemporaneous changes to the largest riverine system in the area, in a type of floodplain environment from which palynological evidence is collected less frequently. It is our hope that this data will allow more confident reconstruction of past settlement patterns throughout the region.

To further this goal, the preliminary floodplain accretion model is now being tested during a second, more intensive phase of the investigation. Recent changes in overall project design preclude any disturbance of deposits located

below historic fill levels. Potential project-related effects upon aboriginal archeological resources appear limited to deep piles and caissons, very small areas in which conventional and safe archeological investigation is not cost-effective.

The paleoenvironmental data appear particularly significant and additional geotechnical borings, using more sophisticated technology, were undertaken during June 2000. Geoprobe equipment has yielded finer-grained sampling information with additional new, datable organic remains. As analysis and interpretation continues, PAST expects to provide increasingly detailed descriptions of past local environments and flood regimes and correlate the results with regional patterns. Samples from recent strata will also facilitate better interpretation of historic landfill and land use practices.

### References

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